

Relevance of Combustion

- **Combustion and fluid physics are central to our economy and environment**
- **The motivations for combustion studies in microgravity are:**
 - **Scientific knowledge: Microgravity provides a more straightforward, accurate comparison between theory and experiment**
 - **On-orbit Spacecraft Fire Safety: Improvements needed in fire safety aboard crew - inhabited spacecraft; no reason to believe Earth's gravity provides the most flammable/hazardous environment**
 - **Practical Benefit: Microgravity experiments key to understanding turbulent combustion; microgravity simplifies the study of single, arrayed, and sprays of burning droplets, important aspects of engine performance fundamentals and waste incineration technology; in microgravity, soot processes can be controlled for scientific study (environment, industrial applications)**